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EXAMINER

TRAN, ELLEN C

ART UNIT	PAPER NUMBER
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2134

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/622,470

Applicant(s)

HO, ANTHONY TUNG SHUEN

Examiner

Ellen C Tran

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☒ Claim(s) 16-18, 20-24, and 26-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**NORMAN M. WRIGHT**  
PRIMARY EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5 & 6.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***DETAILED ACTION***

1. This action is responsive to communication: original application filed 17 August 2000 with a continuing application date 371 PCT of 18 March 1998.
2. Claims 1-45 are currently pending in this application. Claims 1, 34, 37, 41, 42, 43, 44 and 45 are independent claims.

***Claim Objections***

3. Claims 16-18, 20-24, and 26-31 are objected to because of the following informalities: the word "digitized" is incorrectly spelled as "digitised". Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. **Claims 1-4, 6-18, 25-27, 32-45** are rejected under 35 U.S.C. 102(a) as being anticipated by Cooperman et al. U.S. Patent No. 5,613,004 issued 18 March 1997 (hereinafter '004).

**As to independent claim 1, "A method of steganographic encoding including the steps of:"** is taught in '004 col. 4, lines 48-51;

**"(A) providing primary data containing a plurality of addressable first data elements"** is shown in '004 col. 8, lines 20-25;

**“(B) providing secondary data containing a plurality of second data elements; and (C) for each second data element:”** is disclosed in ‘004 col. 8, lines 26-28;

**“(C1) searching for a first data element which matches content of the second data element, and”** is taught in ‘004 col. 8 lines 36-38 (i.e. “searching” same as “convolution operation”);

**“(C2) generating a key element including the address of the matching first data element when a match is found for the content of the second data element”** is shown in ‘004 col. 8, lines 15-27 (i.e. “saved along with information matching them ... in a bit addressable manner”).

**As to dependent claim 2, “wherein the first and second data elements are represented by integer values and wherein step (C) further includes:”** is disclosed in ‘004 col. 8, lines 26-29;

**“when a match is not found for the content of a second data element; (C3) producing an adjusted second data element by incrementing or decrementing the integer value of the second data element”** is taught in col. 12, lines 25-32;

**“(C4) searching for a first data element which matches the integer value of the adjusted second data element, and”** is shown in ‘004 col. 8, lines 36-38;

**“(C5) generating a key element including the address of the matching first data element when a match is found for the adjusted second data element”** is disclosed in ‘004 col. 8, lines 15-27;

**“and replacing the content of the matching first data element with the integer value of the second data element prior to producing the adjusted second data element”** is taught in ‘004 col. 8, lines 33-42.

**As to dependent claim 3, “wherein step (C) further includes: when a match is not found for ‘the content of the adjusted second data element; (C6) . producing a new adjusted second data element by incrementing or decrementing the adjusted second data element and repeating steps (C4) and (C5) for the new adjusted second data element”** is taught in ‘004 col. 9, lines 59-62.

**As to dependent claim 4, “wherein, prior to step (C) the method includes: determining a range for the contents of the first data elements, determining a range for the contents of the second data elements”** is taught in ‘004 col. 8, lines 1-9;

**“comparing the range for the first data elements with the range for the second data elements”** is shown in ‘004 col. 8, lines 45-57;

**“shifting the contents of the second data elements when the range for the second data elements falls outside of the range for the first data elements, such that the range for the second data elements falls substantially within the range for the first data elements, and using the shifted second data elements as the second data elements in step (C)”** is shown in ‘004 col. 8, lines 57-63.

**As to dependent claim 6, “wherein the step of determining a range for the contents of the second data elements includes: establishing as a reference a**

**minimum value which can be attributed to the range of possible second data elements” is disclosed in ‘004 col. 8, lines 19-25.**

**As to dependent claim 7, “wherein the step of comparing includes calculating an offset value by subtracting the reference value from the lower limit” is taught in ‘004 col. 8, lines 29-33.**

**As to dependent claim 8, “wherein the step of shifting includes adding the offset value to the contents of each second data element” is shown in ‘004 col. 8, lines 33-42.**

**As to dependent claim 9 and 10, “further including storing the key elements” and “further including storing the offset value with the key elements” is disclosed in ‘004 col. 8 lines 15-33.**

**As to dependent claim 11, “wherein: step (A) includes providing a digital representation of the content of each first data element, step (B) includes providing a digital representation of the content of each second data element, and step (C1) includes comparing values of the digital representations of the first and second data elements” is taught in ‘004 col. 1, lines 5-20.**

**As to dependent claim 12, “wherein the secondary data includes a text message and each second data element” is shown in ‘004 col. 4, lines 3-6;**

**“includes an alphanumeric character” is disclosed in ‘004 col. 14, lines 12-14.**

**As to dependent claim 13, “wherein the text message includes one or more of the following:**

**a title,**

**an artist,**  
**a copyright holder,**  
**a body to which royalties should be paid, and general terms for publisher distribution”** is taught in ‘004 col. 14, lines 14-22.

**As to dependent claim 14, “further including storing the primary data or modified primary data produced by step (C5)”** is shown in ‘004 col. 9, lines 29-30.

**As to dependent claim 15, 16, and 17 “wherein the primary data includes first data elements arranged in a two-dimensional array wherein each first data element defines a characteristic associated with a still image element” and “wherein the first data elements are obtained from a stream of data representing a digitized still image” and “wherein the digitized still image is obtained from a still digital camera”** is disclosed in ‘004 col. 4, lines 32-36.

**As to dependent claim 18, “wherein the digitized still image is obtained from a computer game or other software”** is taught in ‘004 col. 4, lines 61-63.

**As to dependent claim 25, “wherein the primary data includes first data elements arranged in a one-dimensional array wherein each first data element defines a characteristic associated with a digital audio sample”** is shown in ‘004 col. 6, lines 6-7.

**As to dependent claim 26, and 27 “wherein the digital audio samples are obtained from a stream of data representing digitized sound or music” and “wherein the digital audio samples are obtained from two streams of data**

**representing two channels of digitized sound for stereo reproduction”** is disclosed in ‘004 col. 6 lines 11-19.

**As to dependent claim 32, “wherein the number of first data elements is greater than the number of second data elements”** is taught in ‘004 col. 8, lines 29-31.

**As to dependent claim 33, “wherein the address of each first data element is used only once for generating the key elements, whereby second data elements having equal contents are matched to first data elements having different addresses”** is shown in ‘004 col. 8 lines 33-42.

**As to independent claim 34,** this claim contains substantially similar subject matter as independent claim 1, (i.e. claim 1 addresses encode claim 34 addresses decode) and is rejected along the same rationale.

**As to dependent claim 35 and 36,** these claims contain substantially similar subject matter as cited above in claims 7-12 and are rejected along the same rationale.

**As to independent claim 37,** this claim is directed to the apparatus of the method of claim 1 and is similarly rejected along the same rationale.

**As to dependent claim 38-40,** these claims are directed to the apparatus of the method of claim 2-4 and are similarly rejected along the same rationale.

**As to independent claim 41,** this claim is directed to the apparatus of the method of claim 34 and is similarly rejected along the same rationale.



**As to independent claim 42-45**, these claims contain substantially similar as cited above in as claims 1, 34, 37, and 41 and are rejected along the same rationale (i.e. cryptography same as steganography).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over '004, in further view of Kobayashi et al. U.S. Patent No. 6,249,870 issued 19 June 2001 (hereinafter '870).

**As to dependent claim 5**, the following is not taught in '004 **"wherein the step of determining a range for the contents of the first data elements includes calculating a mean and standard deviation for the first data elements; and determining a lower limit for the first data elements based on the mean and standard deviation"** however '870 teaches "" in col. 7 lines 39-45 "values of the detection basic function are concentrated around their average with the change range of value being small at nearby points necessary for changing the values of detection basic function. More specifically, for the latter condition, when  $\sigma$  is assumed to be the standard deviation of detection basic function".

**It would have been obvious** to one of ordinary skill in the art at the time of the invention to further modify a steganographic method of protecting copy protection rights to include a means to utilize statistical calculation taught in '870. One of ordinary skill in the art would have been motivated to perform such a modification because the ability to establish the genuine owner through statistical calculation is utilized in a data hiding method of '870 (see col. 1, lines 6 et seq.) "The present invention relates to a data hiding method and a data extraction method to embed owner or copyright information (message information) into media information such as digital images ... controlling the embedding operation for the information with a statistical examination".

8. **Claims 19, 20, and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over '004, in further view of Braudway et al. U.S. Patent No. 5,825,892 issued 20 October 1998 (hereinafter '892).

**As to dependent claim 19, "wherein each first data element defines a characteristic associated with a motion video element"** is taught in '004 col. 4, lines 45-49 "includes modification to handle MPEG compressed audio and video" the following is not taught in '004 **"wherein the primary data includes first data elements arranged in a three-dimensional array"** however '892 teaches "In one embodiment the fine alignment of the correlation reference plane relative to the marked image is performed by evaluating a three-dimensional array" in col. 14, lines 51-55.

**It would have been obvious** to one of ordinary skill in the art at the time of the invention to further modify a steganographic method of protecting copy protection rights to include a means to utilize a three-dimensional array taught in '892. One of ordinary

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skill in the art would have been motivated to perform such a modification because a robust hiding method will offer more copy protection see '892 (col. 1, lines 11 et seq.) "It is a constant endeavor to find improved techniques of placing a visible or invisible identifying mark on an image".

**As to dependent claim 20, "wherein the first data elements are obtained from a stream of data representing digitized motion video"** is taught in '004 col. 28, lines 27-29 "wherein the sample stream is obtained from at least one digitized movie".

**As to dependent claim 23, "wherein the digitized video is obtained from a digitized movie contained within a computer game or other software"** is shown in '004 col. 4, lines 44-63.

9. **Claims 21, 22, 24, and 28-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over '004, in further view of '892, and in further view of Van Wie et al. U.S. Patent No. 5,943,422 issued 24 August 1999 (hereinafter '422).

**As to dependent claim 21**, the following is not taught in the combination of '004 and '892 **"wherein the digitized video is obtained from a Video Compact Disc player"** however '422 teaches "The present inventions may be used with all sorts of different kinds of electronic appliances 100 each of which may include a rights management component ... an example media player 102 capable of playing Digital Versatile Disks (DVDs)" in col. 11 lines 15-67.

**It would have been obvious** to one of ordinary skill in the art at the time of the invention to further modify a steganographic method of protecting copy protection rights

to include electronic appliances to utilize the steganographic media as shown in '422. One of ordinary skill in the art would have been motivated to perform such a modification because "end to end" right protection is needed see '422 (col. 2, lines 3-13) "Moreover, the "real world" is analog. Everything digital must ultimately be turned into something analog if we are to experience it ... Despite the pervasiveness of analog signals, exiting methods for managing rights and protecting copyright in the analog realm are primitive or non-existent".

**As to dependent claim 22 and 30 "wherein the digitized video is obtained from a Laser Disc player"** is taught in '422 col. 11, lines 15-67 "an example media player 102 capable of playing Digital Versatile Disks (DVDs)" (i.e. Laser Disc utilizes same type of player as DVD).

**As to dependent claim 24, "wherein the digitised video is obtained from a Digital Versatile Disc player"** is shown in '422 col. 11, lines 15-67 "an example media player 102 capable of playing Digital Versatile Disks (DVDs)".

**As to dependent claim 28 and 31, "wherein the digitized sound or music is obtained from a Compact Disc player" and "wherein the digitized sound or music is obtained from a Video Compact Disc player"** is disclosed in '422 col. 11, lines 15-67 "an example media player 102 capable of playing Digital Versatile Disks (DVDs)" (i.e. Compact Disc utilizes same type of player as DVD).


**As to dependent claim 29, "wherein the digitized sound or music is obtained from a Digital Audio Tape player" " is taught in '422 col. 11, lines 15-67 "video tape 120 may store video and audio signals in analog form".**

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen C Tran whose telephone number is (703) 305-8917. The examiner can normally be reached on 6:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A Morse can be reached on (703) 308-4789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5484.

  
NORMAN M. WRIGHT  
PRIMARY EXAMINER

Ellen Tran  
Patent Examiner  
Technology Center 2134  
11 March 2004